CLAIMS

1. A light emitting element comprising:

a first electrode;

a second electrode; and

a plurality of layers located between the first electrode and the second electrode,

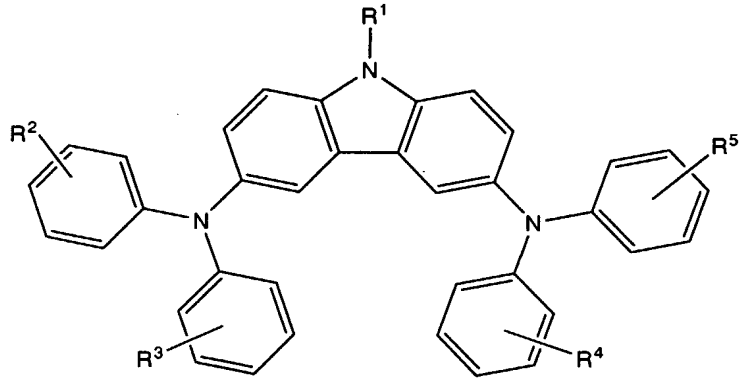
wherein the plurality of layers comprises a layer comprising a light emitting substance,

wherein at least one of the plurality of layers comprises:

a carbazole derivative represented by General Formula (1); and

a metal oxide, and

[Chemical Formula 1]



(1)

wherein in the formula, R^1 refers to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocycle residue, and R^2 to R^5 is the same or different material and refer to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon

number of 1 to 20, an acyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, a dialkylamino group having a carbon number of 1 to 20, a diarylamino group having a carbon number of 1 to 20, a substituted or unsubstituted heterocycle residue, or a carbazolyl group.

2. A light emitting element comprising:

a first electrode;

a second electrode; and

a plurality of layers located between the first electrode and the second electrode,

wherein the plurality of layers comprises:

a first layer comprising a light emitting substance; and

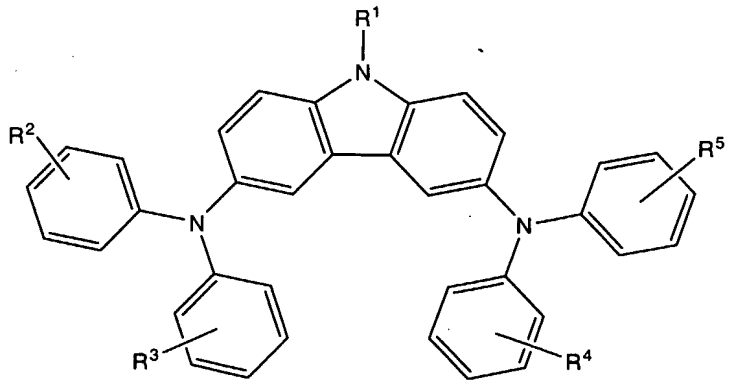
a second layer for generating a hole,

wherein the second layer comprises:

a carbazole derivative represented by General Formula (1); and

a metal oxide, and

[Chemical Formula 1]



(1)

wherein in the formula, R^1 refers to hydrogen, halogen, a cyano group, an alkyl

group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocycle residue, and R^2 to R^5 is the same or different material and refer to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, an acyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, a dialkylamino group having a carbon number of 1 to 20, a diarylamino group having a carbon number of 1 to 20, a substituted or unsubstituted heterocycle residue, or a carbazolyl group.

3. A light emitting element comprising:

a first electrode;

a second electrode; and

a plurality of layers located between the first electrode and the second electrode,

wherein the plurality of layers comprises:

a first layer comprising a light emitting substance; and

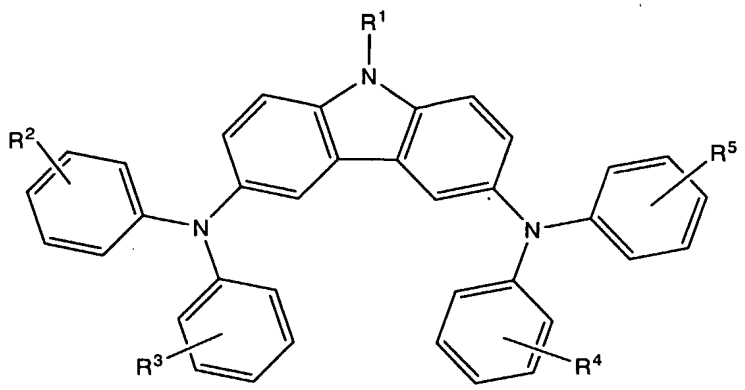
a second layer for transporting a hole,

wherein the second layer comprises:

a carbazole derivative represented by General Formula (1); and

a metal oxide, and

[Chemical Formula 1]



(1)

wherein in the formula, R^1 refers to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocycle residue, and R^2 to R^5 is the same or different material and refer to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, an acyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, a dialkylamino group having a carbon number of 1 to 20, a diarylamino group having a carbon number of 1 to 20, a substituted or unsubstituted heterocycle residue, or a carbazolyl group.

4. A light emitting element comprising:

a first electrode;

a second electrode; and

a plurality of layers located between the first electrode and the second electrode,

wherein light emission is performed when a potential of the first electrode is higher than that of the second electrode,

wherein the plurality of layers comprises:

a first layer comprising a light emitting substance; and

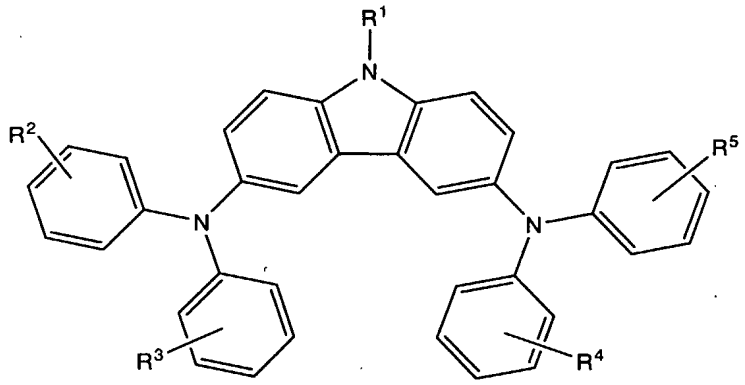
a second layer located between the first electrode and the first layer,

wherein the second layer comprises:

a carbazole derivative represented by General Formula (1); and

a metal oxide, and

[Chemical Formula 1]



(1)

wherein in the formula, R^1 refers to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocycle residue, and R^2 to R^5 is the same or different material and refer to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, an acyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, a dialkylamino group having a carbon number of 1 to 20, a diarylamino group having a carbon number of 1 to 20, a substituted or unsubstituted heterocycle residue, or a carbazolyl group.

5. A light emitting element comprising:

a first electrode;

a second electrode; and

a plurality of layers located between the first electrode and the second electrode,

wherein light emission is performed when a potential of the first electrode is higher than that of the second electrode,

wherein the plurality of layers comprises:

a first layer comprising a light emitting substance; and

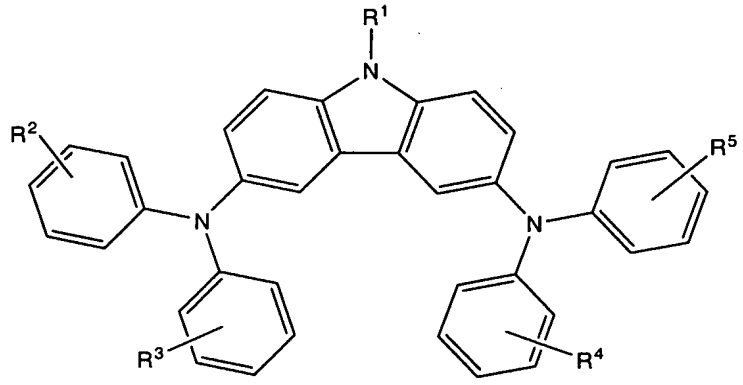
a second layer located between the second electrode and the first layer,

wherein the second layer comprises:

a carbazole derivative represented by General Formula (1); and

a metal oxide, and

[Chemical Formula 1]



(1)

wherein in the formula, R^1 refers to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocycle residue, and R^2 to

R^5 is the same or different material and refer to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, an acyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, a dialkylamino group having a carbon number of 1 to 20, a diarylamino group having a carbon number of 1 to 20, a substituted or unsubstituted heterocycle residue, or a carbazolyl group.

6. A light emitting element comprising:

a first electrode;

a second electrode; and

a plurality of layers located between the first electrode and the second electrode,

wherein light emission is performed when a potential of the first electrode is higher than that of the second electrode,

wherein the plurality of layers comprises:

a first layer comprising a light emitting substance;

a second layer located between the first electrode and the first layer, and

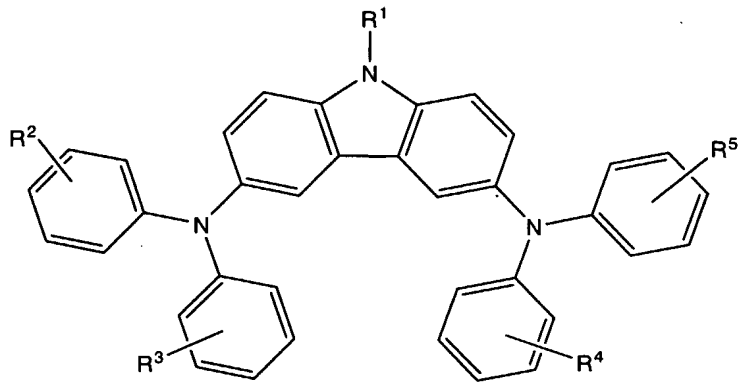
a third layer located between the second electrode and the first layer,

wherein both of the second layer and the third layer comprise:

a carbazole derivative represented by General Formula (1); and

a metal oxide, and

[Chemical Formula 1]



(1)

wherein in the formula, R^1 refers to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocycle residue, and R^2 to R^5 is the same or different material and refer to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, an acyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, a dialkylamino group having a carbon number of 1 to 20, a diarylamino group having a carbon number of 1 to 20, a substituted or unsubstituted heterocycle residue, or a carbazolyl group.

7. A light emitting element comprising:

a first electrode;

a second electrode; and

a plurality of layers located between the first electrode and the second electrode,

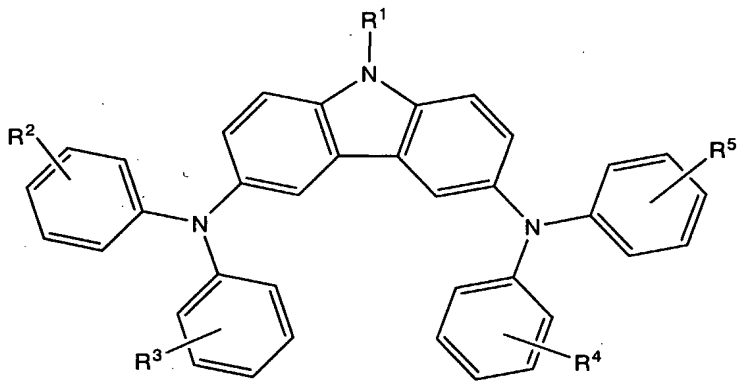
wherein the plurality of layers comprises a layer comprising a light emitting substance,

wherein at least one of the plurality of layers comprises:

a carbazole derivative represented by General Formula (1); and

a substance for accepting an electron from the carbazole derivative, and

[Chemical Formula 1]



(1)

wherein in the formula, R^1 refers to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocycle residue, and R^2 to R^5 is the same or different material and refer to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, an acyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, a dialkylamino group having a carbon number of 1 to 20, a diarylamino group having a carbon number of 1 to 20, a substituted or unsubstituted heterocycle residue, or a carbazolyl group.

8. A light emitting element comprising:

a first electrode;

a second electrode; and

a plurality of layers located between the first electrode and the second electrode,

wherein the plurality of layers comprises:

a first layer comprising a light emitting substance; and

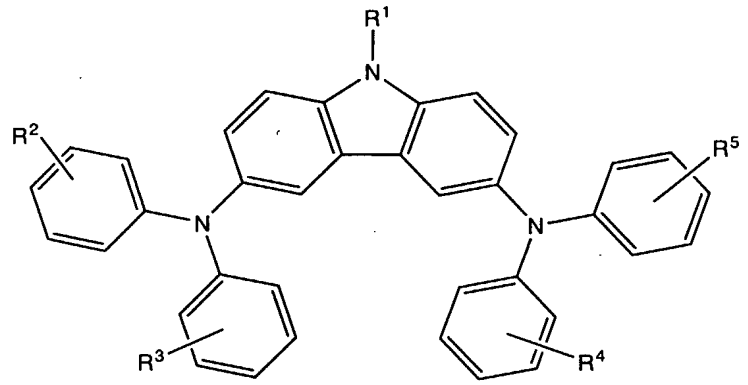
a second layer for generating a hole,

wherein the second layer comprises:

a carbazole derivative represented by General Formula (1); and

a substance for accepting an electron from the carbazole derivative, and

[Chemical Formula 1]



(1)

wherein in the formula, R^1 refers to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocycle residue, and R^2 to R^5 is the same or different material and refer to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, an acyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, a dialkylamino group having a carbon number of 1 to 20, a diarylamino group having a carbon number of 1 to 20, a substituted or

unsubstituted heterocycle residue, or a carbazolyl group.

9. A light emitting element comprising:

a first electrode;

a second electrode; and

a plurality of layers located between the first electrode and the second electrode,

wherein the plurality of layers comprises:

a first layer comprising a light emitting substance; and

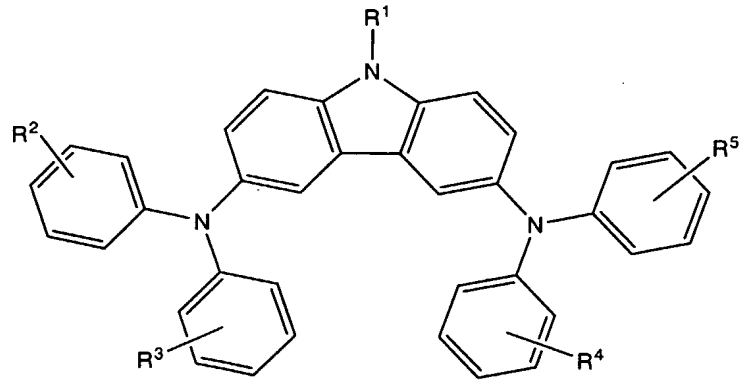
a second layer for transporting a hole,

wherein the second layer comprises:

a carbazole derivative represented by General Formula (1); and

a substance for accepting an electron from the carbazole derivative, and

[Chemical Formula 1]



(1)

wherein in the formula, R^1 refers to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocycle residue, and R^2 to

R^5 is the same or different material and refer to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, an acyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, a dialkylamino group having a carbon number of 1 to 20, a diarylamino group having a carbon number of 1 to 20, a substituted or unsubstituted heterocycle residue, or a carbazolyl group.

10. A light emitting element comprising:

a first electrode;

a second electrode; and

a plurality of layers located between the first electrode and the second electrode,

wherein light emission is performed when a potential of the first electrode is higher than that of the second electrode,

wherein the plurality of layers comprises:

a first layer comprising a light emitting substance; and

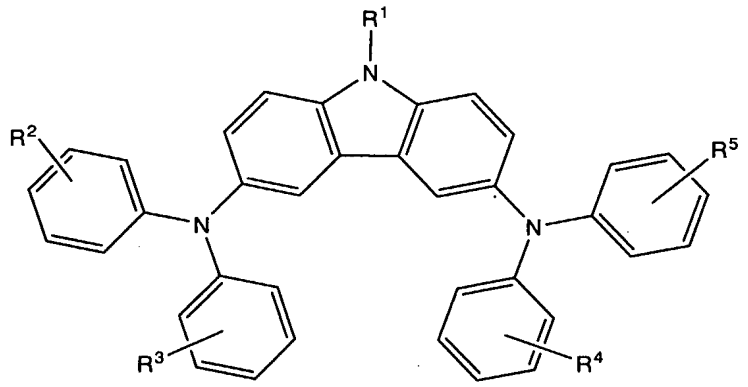
a second layer located between the first electrode and the first layer,

wherein the second layer comprises:

a carbazole derivative represented by General Formula (1); and

a substance for accepting an electron from the carbazole derivative, and

[Chemical Formula 1]



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wherein in the formula, R^1 refers to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocycle residue, and R^2 to R^5 is the same or different material and refer to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, an acyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, a dialkylamino group having a carbon number of 1 to 20, a diarylamino group having a carbon number of 1 to 20, a substituted or unsubstituted heterocycle residue, or a carbazolyl group.

11. A light emitting element comprising:

a first electrode;

a second electrode; and

a plurality of layers located between the first electrode and the second electrode,

wherein light emission is performed when a potential of the first electrode is higher than that of the second electrode,

wherein the plurality of layers comprises:

a first layer comprising a light emitting substance; and

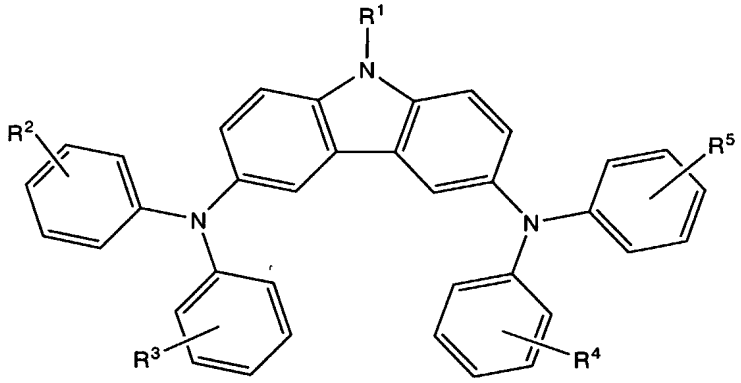
a second layer located between the second electrode and the first layer,

wherein the second layer comprises:

a carbazole derivative represented by General Formula (1); and

a substance for accepting an electron from the carbazole derivative, and

[Chemical Formula 1]



(1)

wherein in the formula, R^1 refers to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, a substituted or unsubstituted aryl group, or a substituted or unsubstituted heterocycle residue, and R^2 to R^5 is the same or different material and refer to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, an acyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, a dialkylamino group having a carbon number of 1 to 20, a diarylamino group having a carbon number of 1 to 20, a substituted or unsubstituted heterocycle residue, or a carbazolyl group.

12. A light emitting element comprising:

a first electrode;

a second electrode; and

a plurality of layers located between the first electrode and the second electrode,

wherein light emission is performed when a potential of the first electrode is higher than that of the second electrode,

wherein the plurality of layers comprises:

a first layer comprising a light emitting substance;

a second layer located between the first electrode and the first layer, and

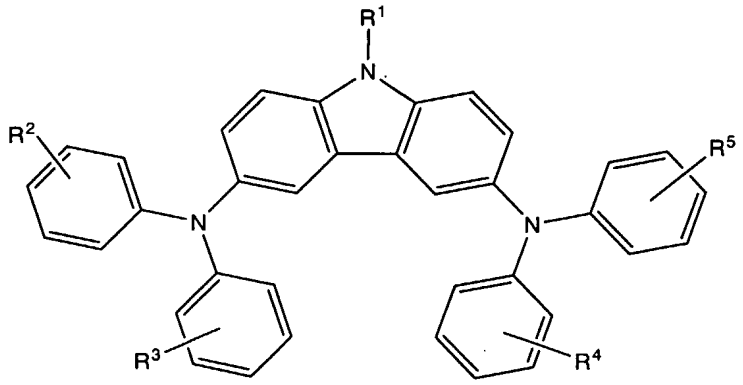
a third layer located between the second electrode and the first layer,

wherein both of the second layer and the third layer comprise:

a carbazole derivative represented by General Formula (1); and

a substance for accepting an electron from the carbazole derivative, and

[Chemical Formula 1]



(1)

wherein in the formula, R^1 refers to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, a substituted or

unsubstituted aryl group, or a substituted or unsubstituted heterocycle residue, and R^2 to R^5 is the same or different material and refer to hydrogen, halogen, a cyano group, an alkyl group having a carbon number of 1 to 20, an alkoxyl group having a carbon number of 1 to 20, an acyl group having a carbon number of 1 to 20, a haloalkyl group having a carbon number of 1 to 20, a dialkylamino group having a carbon number of 1 to 20, a diarylamino group having a carbon number of 1 to 20, a substituted or unsubstituted heterocycle residue, or a carbazolyl group.

13. The light emitting element according to any one of Claims 1 to 6, wherein the metal oxide is one or a plurality of oxides of any transition metal of Group 4 to Group 12 in the periodic table.

14. The light emitting element according to any one of Claims 1 to 6, wherein the metal oxide is one or a plurality of oxides of any transition metal of Group 4 to Group 8 in the periodic table.

15. The light emitting element according to any one of Claims 1 to 6, wherein the metal oxide is one or a plurality of oxides selected from the group consisting of molybdenum oxide (MoO_x), vanadium oxide (VO_x), ruthenium oxide (RuO_x), tungsten oxide (WO_x), rhenium oxide (ReO_x), titanium oxide (TiO_x), chromium oxide (CrO_x), zirconium oxide (ZrO_x), hafnium oxide (HfO_x), and tantalum oxide (TaO_x).

16. A light emitting device, comprising the light emitting element

according to any one of Claims 1 to 15 as a pixel or a light source.

17. An electronic device, comprising the light emitting device according to Claim 16.